

The performance of deterministic and stochastic interest rate risk measures:

Another Question of Dimensions?

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Received: 15 July 2013 / Accepted: 17 September 2014 / Published online: 9 October 2014
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Abstract The efficiency of traditional and stochastic interest rate risk measures is compared under one-, two-, and three-factor no-arbitrage Gauss-Markov term structure models, and for different immunization periods. The empirical analysis, run on the German Treasury bond market from January 2000 to December 2010, suggests that: i) Stochastic interest rate risk measures provide better portfolio immunization than the Fisher-Weil duration; and ii) The superiority of the stochastic risk measures is more evident for multi-factor models and for longer investment horizons. These findings are supported by a first-order stochastic dominance analysis, and are robust against yield curve estimation errors.

Keywords Interest rate risk · Asset-liability management · Immunization strategies · Stochastic duration · Stochastic dominance

JEL Classifications G11 · G12 · G20 · C15 · E43

Financial support by FCT's grant number PTDC/EGE-ECO/099255/2008 is gratefully acknowledged.

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